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REMARKS

The Final Office Action mailed March 8, 2006, has been received and reviewed. Claims 1 through 21 are currently pending in the application. Claims 1 through 13, 17, 20, and 21 stand rejected. Claims 14 through 16, 18, and 19 stand objected to. Applicants have canceled claims 7, 8, 11, 13, 17, and 20, without prejudice. Applicants have amended claims 1, 6, 9, 14, 15, 16, 18, 19, and 21, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 112 Claim Rejections

Claims 6-8, 11, 13, and 17 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

Regarding claim 6, Applicants have amended claim 6 to delete the claim element of "extracting the broadcast message". Accordingly, Applicants respectfully request the rejection be withdrawn.

Regarding claim 7, Applicants have canceled claim 7.

Regarding claim 8, Applicants have canceled claim 8.

Regarding claim 11, Applicants have canceled claim 11.

Regarding claim 13, Applicants have canceled claim 13.

Regarding claim 17, Applicants have canceled claim 17.

Objections to Claims 14-16, 18, and 19 Allowable Subject Matter

Claims 14-16, 18, and 19 stand objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form.

Applicants have amended claims 14-16, 18, and 19 into independent form including any intervening claim limitations. Applicants respectfully request the objections be withdrawn.

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Specifically, Applicants' objected to claim 14 recites the claim limitation of "wherein the **infrastructure element is a packet control function node.**"

Specifically, Applicants' objected to claim 18 recites the claim limitation of "wherein the **infrastructure element is a packet data service node.**"

Applicants have amended independent claims 1, 6, and 9 to include similar claim limitations as deemed allowable by the Examiner.

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 6,751,218 to Hagirahim et al.

Claims 1-3 and 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hagirahim et al. (U.S. Patent No. 6,751,218). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicants submit that the Hagirahim reference does not and cannot anticipate under 35 U.S.C. § 102 the presently claimed invention of amended independent claim 1, and claims 2-3 depending therefrom and amended independent claim 9, because the Hagirahim reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims.

Applicants' presently amended independent claim 1 recites:

1. In a wireless communication system supporting broadcast transmissions, the system having a broadcast source node and at least one termination node, at least one router coupled between the source node and the at least one termination node, a method for setting up transmission paths comprising:
 - determining a transmission range for a broadcast transmission within the system;
 - building a multicast tree from a first termination node to the broadcast source node, the multicast tree including the at least one router, wherein the first termination node is one of a packet control node or a packet data services node; and**

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transmitting a broadcast message through the multicast tree over the transmission range. (Emphasis added.)

The Hagirahim reference discloses ATM connected multicast data transmission to a multiplicity of ATM users over an IP backbone. A controller in the IP backbone translates a pre-stored multicast initiating address into a multiplicity of pre-stored pairs of addresses, each pair composed of a user's ATM destination address and the IP address of the gateway serving the user's ATM destination, followed by establishing connections between the multicast source ATM address and each of the user's ATM addresses. (Hagirahim, col. 1, lines 39-48).

However, the Hagirahim reference does not disclose "building a multicast tree from a first termination node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node" as claimed by Applicants in presently amended claim 1. Therefore, the Hagirahim reference cannot anticipate under 35 U.S.C. §102 Applicants' invention as presently claimed in amended independent claim 1. Accordingly, Applicants respectfully request the rejections of independent claim 1 and claims 2-3 depending therefrom be withdrawn.

Applicants' presently amended independent claim 9 recites:

9. An infrastructure element for generating Internet Protocol packets in a wireless transmission system supporting broadcast transmissions, the infrastructure element comprising:

- means for determining a broadcast transmission range;
- means for generating an Internet Protocol packet, the Internet Protocol packet having a multicast address; and
- means for transmitting the Internet Protocol packet, wherein the infrastructure element is one of a packet control node or a packet data services node. (Emphasis added.)

Applicants sustain the above-proffered arguments regarding the disclosure of the Hagirahim reference, namely, that the Hagirahim reference discloses ATM connected multicast data transmission to a multiplicity of ATM users over an IP backbone. A controller in the IP backbone translates a pre-stored multicast initiating address into a multiplicity of pre-stored pairs of addresses, each pair composed of a user's ATM destination address and the IP address of the gateway serving the user's ATM destination, followed by establishing connections between the multicast source ATM address and each of the user's ATM addresses. (Hagirahim, col. 1, lines 39-48).

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However, the Hagirahim reference does not disclose "determining a broadcast transmission range ... wherein the infrastructure element is one of a packet control node or a packet data services node" as claimed by Applicants in presently amended claim 9. Therefore, the Hagirahim reference cannot anticipate under 35 U.S.C. §102 Applicants' invention as presently claimed in amended independent claim 9. Accordingly, Applicants respectfully request the rejections of independent claim 9 be withdrawn.

Anticipation Rejection Based on U.S. Patent No. 6,781,999 to Eyuboglu et al.

Claim 20 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Eyuboglu et al. (U.S. Patent No. 6,781,999). Applicants have canceled claim 20 without prejudice.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on Hagirahim et al. in view of Eyuboglu et al.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hagirahim et al. (U.S. Patent No. 6,751,218) in view of Eyuboglu et al. (U.S. Patent No. 6,781,999).

Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of claim 4 is improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claim limitations.

Regarding dependent claim 4, Applicants have amended independent claim 1 to include claim limitations not taught or suggested in the cited references. Furthermore, the amended claim elements are similar to claim elements deemed allowable by the Examiner.

Specifically, Applicants' independent claim 1, as presently amended, recites:

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1. In a wireless communication system supporting broadcast transmissions, the system having a broadcast source node and at least one termination node, at least one router coupled between the source node and the at least one termination node, a method for setting up transmission paths comprising:

determining a transmission range for a broadcast transmission within the system;

building a multicast tree from a first termination node to the broadcast source node, the multicast tree including the at least one router, **wherein the first termination node is one of a packet control node or a packet data services node**; and

transmitting a broadcast message through the multicast tree over the transmission range. (Emphasis added.)

Applicants respectfully assert that neither the Hagirahim reference nor the Eyuboglu reference, either individually or in any proper combination, teach or suggest Applicants' invention as presently claimed in amended independent claim 1, from which claim 4 at least indirectly depends.

As stated above, the Hagirahim reference teaches or suggests ATM connected multicast data transmission to a multiplicity of ATM users over an IP backbone. A controller in the IP backbone translates a pre-stored multicast initiating address into a multiplicity of pre-stored pairs of addresses, each pair composed of a user's ATM destination address and the IP address of the gateway serving the user's ATM destination, followed by establishing connections between the multicast source ATM address and each of the user's ATM addresses. (Hagirahim, col. 1, lines 39-48), however, the Hagirahim reference appears to be silent regarding **"building a multicast tree from a first termination node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node"** as claimed by Applicants.

The Eyuboglu reference teaches or suggests that when a PDSN receives an IP packet that belongs to a multicast group, it encapsulates it in a Simple Link Layer frame, and sends it over the multicast A10 tunnels to RNCs that serve the members of a particular multicast group. (Eyuboglu, col. 9, lines 29-33). However, the Eyuboglu reference appears to be silent regarding **"building a multicast tree from a first termination node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node"** as claimed by Applicants.

Therefore, since neither the Hagirahim reference nor the Eyuboglu reference teach or suggest Applicants' claimed invention including **"building a multicast tree from a first**

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termination node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node", these references, either individually or in any proper combination, cannot render obvious, under 35 U.S.C. §103, Applicants' invention as presently claimed in amended independent claim 1 from which claim 4 at least indirectly depends. Accordingly, Applicants respectfully request the rejection of dependent claim 4 be withdrawn.

Obviousness Rejection Based on Hagirahim et al. in view of Eyuboglu et al. and further in view of Sato et al.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hagirahim et al. (U.S. Patent No. 6,751,218) in view of Eyuboglu et al. (U.S. Patent No. 6,895,216) and further in view of Sato et al. (U.S. Patent No. 6,895,216). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of claim 5 is improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Regarding dependent claim 5, Applicants have amended independent claim 1 to include claim limitations not taught or suggested in the cited references. Furthermore, the amended claim elements are similar to claim elements deemed allowable by the Examiner.

Specifically, Applicants' independent claim 1, as presently amended, recites:

1. In a wireless communication system supporting broadcast transmissions, the system having a broadcast source node and at least one termination node, at least one router coupled between the source node and the at least one termination node, a method for setting up transmission paths comprising:

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determining a transmission range for a broadcast transmission within the system;
building a multicast tree from a first termination node to the broadcast source node, the multicast tree including the at least one router, wherein **the first termination node is one of a packet control node or a packet data services node**; and
transmitting a broadcast message through the multicast tree over the transmission range. (Emphasis added.)

Applicants respectfully assert that neither the Hagirahim reference nor the Eyuboglu reference nor the Sato reference, either individually or in any proper combination, teach or suggest Applicants' invention as presently claimed in amended independent claim 1, from which claim 5 at least indirectly depends.

As stated above, the Hagirahim reference teaches or suggests ATM connected multicast data transmission to a multiplicity of ATM users over an IP backbone. A controller in the IP backbone translates a pre-stored multicast initiating address into a multiplicity of pre-stored pairs of addresses, each pair composed of a user's ATM destination address and the IP address of the gateway serving the user's ATM destination, followed by establishing connections between the multicast source ATM address and each of the user's ATM addresses. (Hagirahim, col. 1, lines 39-48), however, the Hagirahim reference appears to be silent regarding **"building a multicast tree from a first termination node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node"** as claimed by Applicants.

The Eyuboglu reference teaches or suggests that when a PDSN receives an IP packet that belongs to a multicast group, it encapsulates it in a Simple Link Layer frame, and sends it over the multicast A10 tunnels to RNCs that serve the members of a particular multicast group. (Eyuboglu, col. 9, lines 29-33). However, the Eyuboglu reference appears to be silent regarding **"building a multicast tree from a first termination node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node"** as claimed by Applicants.

Even assuming the Sato reference teaches or suggests, as alleged by the Office Action, namely, that the Sato reference teaches or suggests "compressing multicast information to several wireless terminals in accordance with a transmission rate" (Office Action, p. 8), the Sato reference appears to be silent regarding **"building a multicast tree from a first termination**

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node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node" as claimed by Applicants.

Therefore, since neither the Hagirahim reference nor the Eyuboglu reference nor the Sato reference teach or suggest Applicants' claimed invention including **"building a multicast tree from a first termination node to the broadcast source node, ... wherein the first termination node is one of a packet control node or a packet data services node"**, these references, either individually or in any proper combination, cannot render obvious, under 35 U.S.C. §103, Applicants' invention as presently claimed in amended independent claim 1 from which claim 5 at least indirectly depends. Accordingly, Applicants respectfully request the rejection of dependent claim 5 be withdrawn.

Obviousness Rejection Based on Eyuboglu et al. in view of Lim and further in view of Sato et al.

Claims 10 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eyuboglu et al.(U.S. Patent No. 6,895,216) in view of Lim (U.S. Patent No. 6,801,508) and further in view of Sato et al. (U.S. Patent No. 6,895,216). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of claims 10 and 12 are improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Regarding independent claim 10 and claim 12 depending therefrom, Applicants independent claim 10 includes claim limitations not taught or suggested in the cited references.

Specifically, Applicants' independent claim 10 recites:

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10. A wireless communication system for processing broadcast transmissions in a wireless communication system, the system comprising:

- a **packet service data node** adapted to receive a broadcast message; and
- a **packet control function node** adapted to receive the broadcast message, the broadcast message encapsulated in an Internet Protocol packet addressed to a multicast address wherein the Internet Protocol packet has been compressed and a framing protocol applied to produce a compressed framed packet, wherein the compressed framed packet has been encapsulated with a routing protocol. (Emphasis added.)

Applicants respectfully assert that neither the Eyuboglu reference nor the Lim reference nor the Sato reference, either individually or in any proper combination, teach or suggest Applicants' invention as presently claimed in independent claim 10 from which claim 12 depends.

As stated above, the Eyuboglu reference teaches or suggests that when a PDSN receives an IP packet that belongs to a multicast group, it encapsulates it in a Simple Link Layer frame, and sends it over the multicast A10 tunnels to RNCs that serve the members of a particular multicast group. (Eyuboglu, col. 9, lines 29-33), however, the Eyuboglu reference appears to be silent regarding **"wherein the Internet Protocol packet has been compressed and a framing protocol applied to produce a compressed framed packet, wherein the compressed framed packet has been encapsulated with a routing protocol"** as claimed by Applicants.

Even assuming the Lim reference teaches or suggests as alleged by the Office Action, namely, that the Lim reference teaches or suggests "that a RNC (radio network controller) performs the same functions as a packet control function PCF node (RNC/PCF 121, 122, 123)" (Office Action, p. 10), the Lim reference appears to be silent regarding **"wherein the Internet Protocol packet has been compressed and a framing protocol applied to produce a compressed framed packet, wherein the compressed framed packet has been encapsulated with a routing protocol"** as claimed by Applicants.

Furthermore, even assuming the Sato reference teaches or suggests as alleged by the Office Action, namely, that the Sato reference teaches or suggests "compressing multicast information to several wireless terminals in accordance with a transmission rate" (Office Action, p. 8), the Sato reference appears to be silent regarding **"wherein the Internet Protocol packet has been compressed and a framing protocol applied to produce a compressed framed packet, wherein the compressed framed packet has been encapsulated with a routing protocol"** as claimed by Applicants.

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Therefore, since neither the Eyuboglu reference nor the Lim reference nor the Sato reference teach or suggest Applicants' claimed invention including "wherein the Internet Protocol packet has been compressed and a framing protocol applied to produce a compressed framed packet, wherein the compressed framed packet has been encapsulated with a routing protocol", these references, either individually or in any proper combination, cannot render obvious, under 35 U.S.C. §103, Applicants' invention as presently claimed in independent claim 10 from which claim 12 depends. Accordingly, Applicants respectfully request the rejection of claims 10 and 12 be withdrawn.

Obviousness Rejection Based on Eyuboglu et al. in view of Lim

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Eyuboglu et al.(U.S. Patent No. 6,895,216) in view of Lim (U.S. Patent No. 6,801,508). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of claim 21 is improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Regarding now-independent claim 21, Applicants independent claim 21 includes claim limitations not taught or suggested in the cited references.

Specifically, Applicants' independent claim 21 recites:

21. A communication path for processing broadcast messages in a wireless communication system, comprising:
 - a first multicast tree portion, wherein the broadcast message is transmitted addressed to a multicast Internet Protocol address;
 - a second multicast tree portion, wherein the broadcast message is transmitted addressed to a multicast Internet Protocol address; and

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a third portion, wherein the broadcast message is transmitted addressed to at least one unicast address and **wherein the first multicast tree portion is formed between a content source and a packet data service node, the second multicast tree portion is formed between the packet data service node and a packet control function node, and the third portion is formed from the packet control function node to the base station.** (Emphasis added.)

Applicants respectfully assert that neither the Eyuboglu reference nor the Lim reference, either individually or in any proper combination, teach or suggest Applicants' invention as presently claimed in independent claim 21.

As stated above, the Eyuboglu reference teaches or suggests that when a PDSN receives an IP packet that belongs to a multicast group, it encapsulates it in a Simple Link Layer frame, and sends it over the multicast A10 tunnels to RNCs that serve the members of a particular multicast group. (Eyuboglu, col. 9, lines 29-33). However, the Eyuboglu reference appears to be silent regarding **"wherein the first multicast tree portion is formed between a content source and a packet data service node, the second multicast tree portion is formed between the packet data service node and a packet control function node"** as claimed by Applicants.

Even assuming the Lim reference teaches or suggests as alleged by the Office Action, namely, that the Lim reference teaches or suggests "a RNC (radio network controller) performs the same function as a packet control function PCF node (RNC/PCF 121, 122, 123)" (Office Action, p. 11), the Lim reference appears to be silent regarding **"wherein the first multicast tree portion is formed between a content source and a packet data service node, the second multicast tree portion is formed between the packet data service node and a packet control function node"** as claimed by Applicants.

Therefore, since neither the Eyuboglu reference nor the Lim reference teach or suggest Applicants' claimed invention including **"wherein the first multicast tree portion is formed between a content source and a packet data service node, the second multicast tree portion is formed between the packet data service node and a packet control function node"**, these references, either individually or in any proper combination, cannot render obvious, under 35 U.S.C. §103, Applicants' invention as presently claimed in independent claim 21. Accordingly, Applicants respectfully request the rejection of claim 21 be withdrawn.

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ENTRY OF AMENDMENTS

Applicants propose to cancel claims 7, 8, 11, 13, 17, and 20 and to amend claims 1, 6, 9, 14-16, 18, 19, and 21. The above-amendments should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

CONCLUSION

Claims 1-6, 9-10, 12, 14-16, 18, 19, and 21 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,

Dated: July 6, 2006

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